
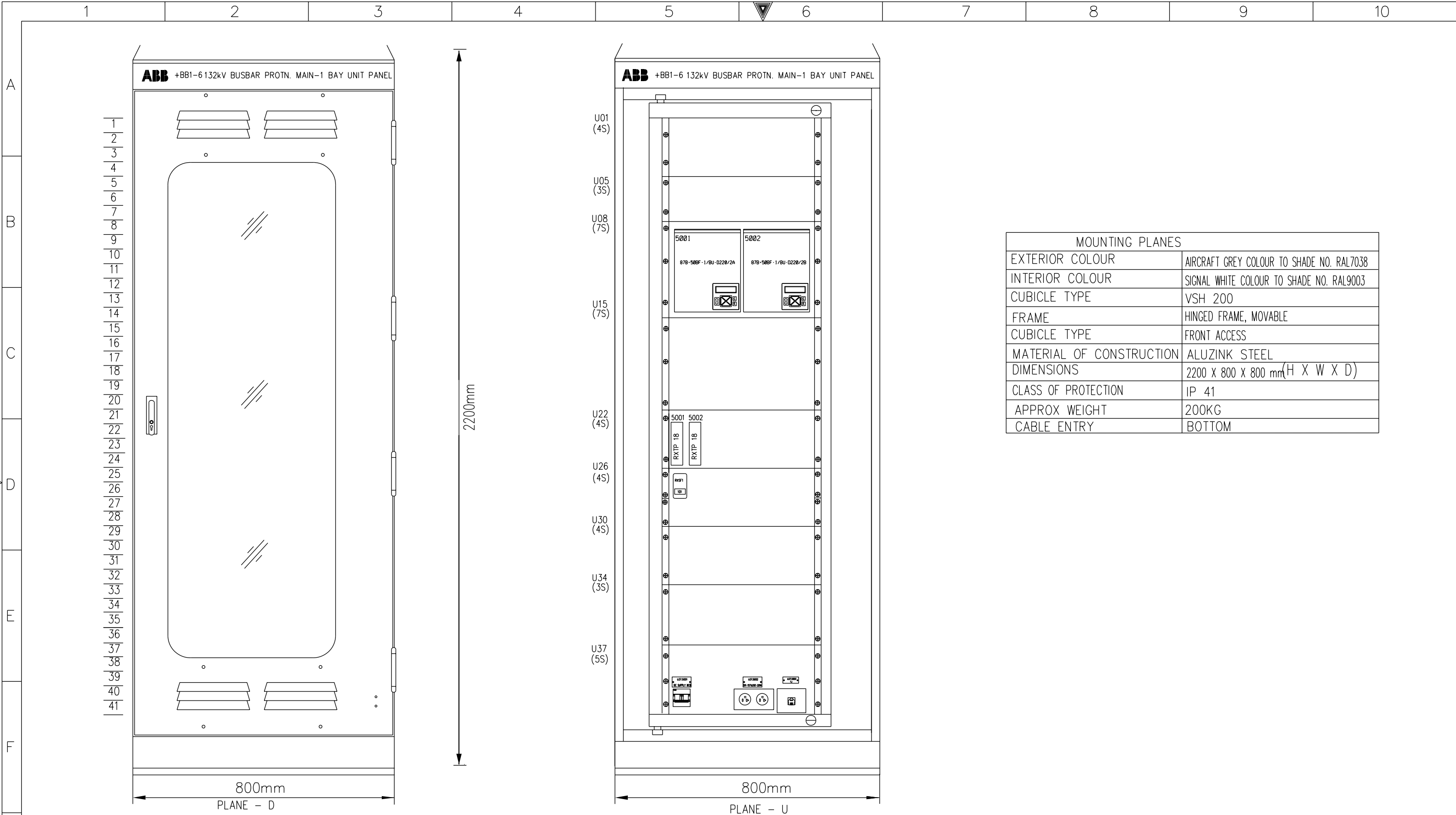


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A			POWER SYSTEMS NETWORK MANAGEMENT PROTECTION AND SUBSTATION AUTOMATION SYSTEMS WBS NO: S-13656					ABB AUTOMATION COMPANY LTD. 414, AL-KHARJ ROAD SECOND INDUSTRIAL CITY RIYADH-11383 K.S.A		
B										
C	CLIENT : SAUDI ELECTRICITY COMPANY CENTRAL OPERATING AREA									
	CONTRACTOR : ABB Contracting Co									
	PROJECT : CONSTRUCTION OF NEW 132/13.8kV SS 8709 IN AL-KHARJ CITY									
D	SUBSTATION : S/S 8709									
	CONTRACT NO. : 11131113/00									
E	TITLE : Assembly Drawing – +BB1-6 [132KV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL]									
F										
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COVER SHEET		<div>الشركة الوطنية لنقل الكهرباء National Grid sa</div>	
			DRAWN BY RIZ CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6					
			DATE STARTED 10.04.2013 DATE COMPLETED _____		S/S 8709 S-13656		INDEX		PLANT NO.	DRAWING NUMBER
	00	13 14	FOR APPROVAL		RIYADH SAUDI ARABIA		-		C421	CD-323013
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC				SHEET NO.	REV. NO.
									SHT	CONT.
									G00	G01

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AS-BUILT BY \_\_\_\_\_ DATE \_\_\_\_\_ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

00	13 14	FOR APPROVAL
REV. NO.	DATE	DESCRIPTION

DRAWN BY RIZ CHECKED BY KVR  
DATE STARTED 10.04.2013 DATE COMPLETED \_\_\_\_\_  
OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC

ASSEMBLY DRAWING

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709

S-13656

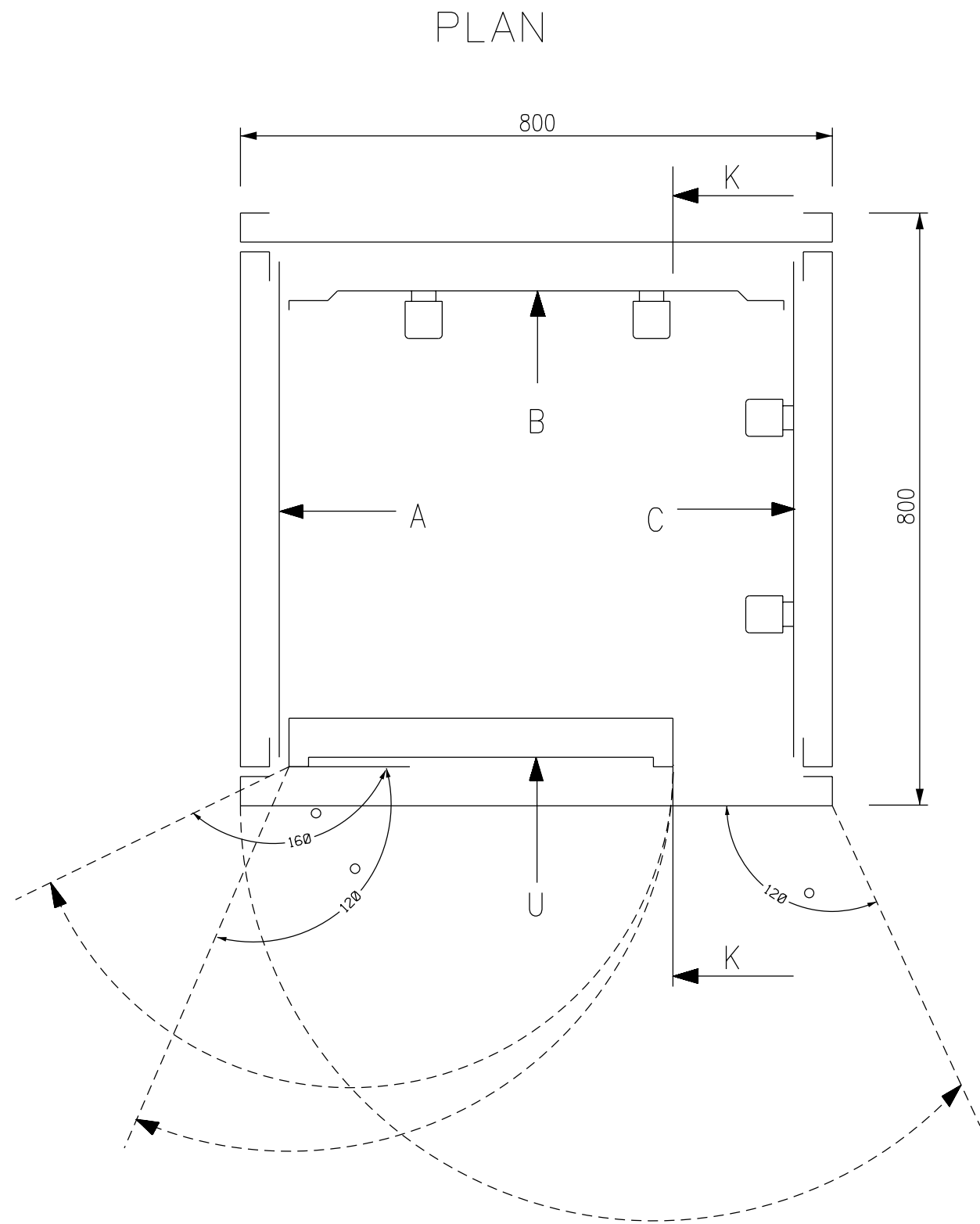
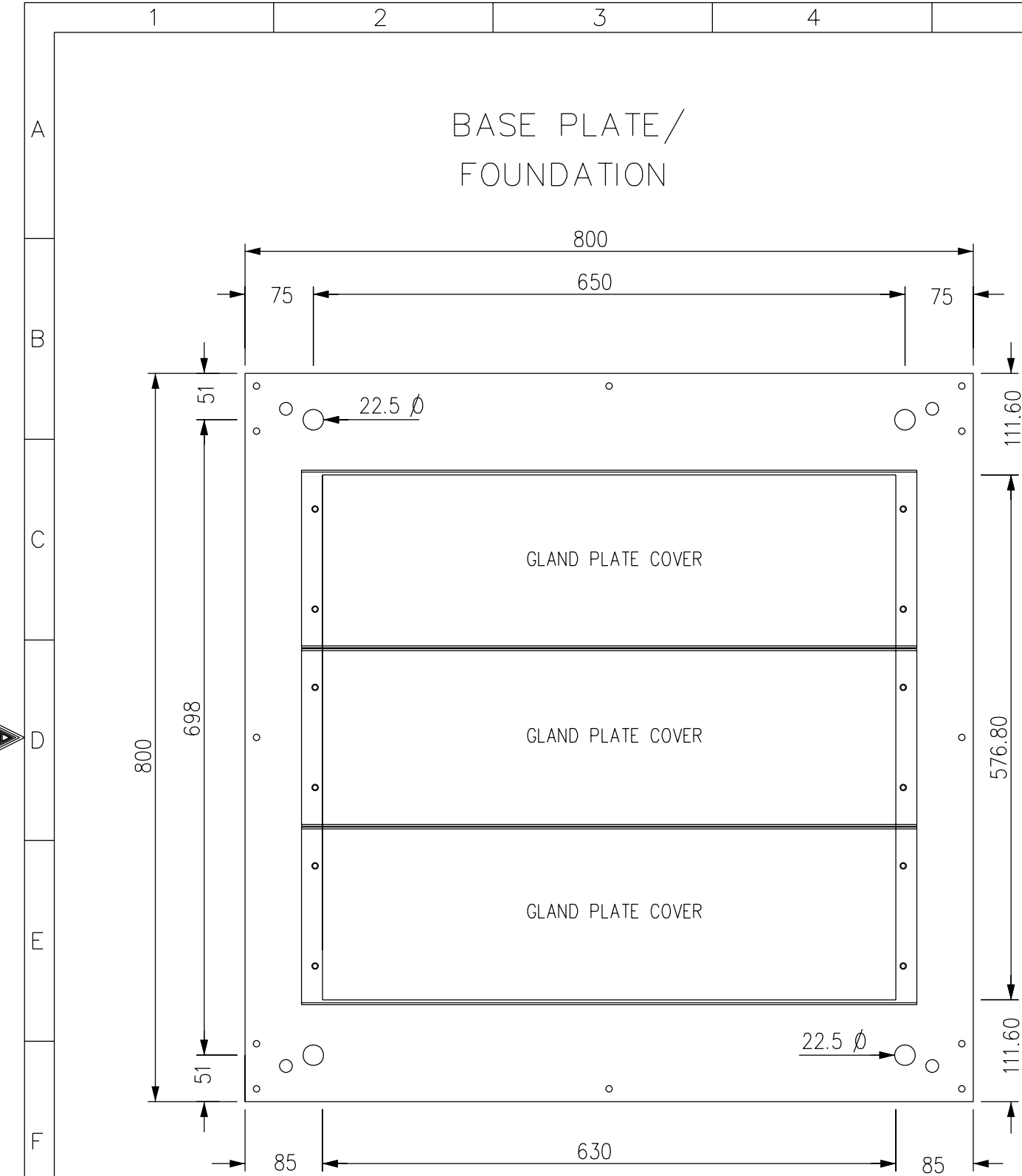
RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء  
National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
-	C421	CD-323013	SHT G01	CONT. G02
				00





AS-BUILT BY \_\_\_\_\_ DATE \_\_\_\_\_ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

00	13 14	FOR APPROVAL
REV. NO.	DATE	DESCRIPTION

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DATE STARTED	10.04.2013	DATE COMPLETED	
OPRG. DEPT.	CTPD	ENG. DEPT.	AUT-PSAC

ASSEMBLY DRAWING

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709

S-13656

RIYADH

SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء



INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.	REV. NO.
-	C421	CD-323013	SHT CONT.	00
			G03G04	

NG/D2-D (2012/01)

DMS

VECTOR

NGD200

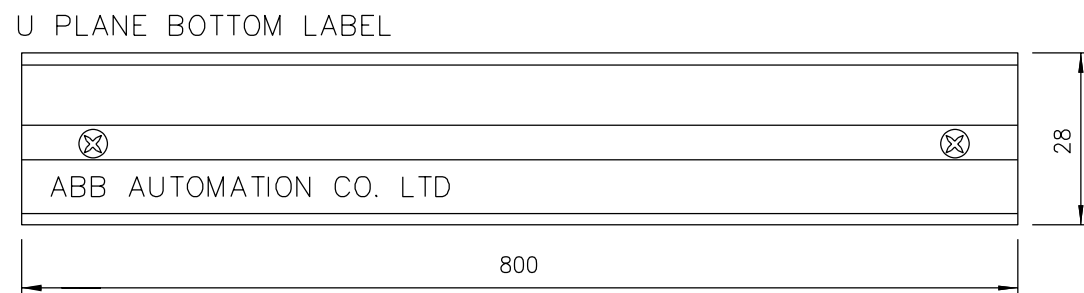
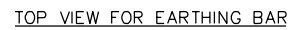


ABB Automation Co.Ltd.



PROJECT	:	National Grid SA S/S 8709
ORDER REFERENCE	:	2875 RF S13656
YEAR OF MANUFACTURE:		2013
PANEL NO.	:	+BB1-6
DRAWING NO.	:	S13656-CD-323014

MADE IN THE KINGDOM OF SAUDI ARABIA

			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>
00	13 14	FOR APPROVAL	DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>

ASSEMBLY DRAWING	
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6	
S/S 8709	S-13656
RIYADH	SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء							نقل الكهرباء	
							National Grid SA	
INDEX	PLANT NO.	DRAWING NUMBER			SHEET NO.		REV. NO.	
					SHT	CONT.		
-	C421	CD-323013			G04	00	00	

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	SUBSTATION : S/S 8709									
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	TITLE : LIST OF APPARATUS – +BB1-6 [132KV BUSBAR PROTECTION MAIN-1 BAY UNIT PANEL]									
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	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC					REV. NO.
					RIYADH SAUDI ARABIA		-	C421	CD-323013	L00L01 00

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A											
B	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N			SHT.	QTY.	TYPE	MAKE	ORDER INFORMATION
				RELAY CUBICLE- +BB1.6 ACCOMODATING THE FOLLOWING							
	1	U08.5001	87B+50BF-1/BU-D220/2A	BAY UNIT FOR NUMERICAL BUSBAR PROTECTION WITH FOLLOWING			293	2	REB 500	ABB	REB500-BU03-V7-C1
	2	U08.5002	87B+50BF-1/BU-D220/2B	HIGH TROUGH-FAULT STABILITY EVEN IN CASE OF CT SATURATION.			295				-A45-P1-F1-BB1-100-
				NEUTRAL CURRENT CRITERION INSTANTANEOUS VALUES FOR FAULT RECORDING.							R0-OC1-BFP1-EFP1-
				DISTURBANCE FREE AND FAST DATA TRANSFER TO & FROM CENTRAL UNIT							PD0-DR0-L0-T0
				PHASE SEGRAGATED MEASUREMENT							
				REDUCE CT PERFORMANCE REQUIREMENTS							
				BUILT IN HUMAN MACHINE INTERFACE							
				BUILT IN BREAKER FAILURE FUNCTION.							
C				END FAULT PROTECTION FUNCTION							
				REDUNT POWER SUPPLY							
				DISTURBANCE RECORDER							
				(1.5SCE @ 2.4KHZ) PER BAY UNIT							
				BINARY INPUT : 20							
				BINARY OUTPUT : 16							
				FULLY NUMERICAL SIGNAL PROCESSING							
				RATED CURRENT : 1/5A							
				AUX. VOLTAGE : 48-250V DC							
				RATED FREQUENCY : 60HZ							
D											
	3	U22.5001	TS-1	TEST SWITCH FOR REB500-BU RELAY (87B+50BF-1/BU-D220/2A)			294	1	RTXP18	ABB	RK 926 115-AH
	4	U22.5002	TS-2	TEST SWITCH FOR REB500-BU RELAY (87B+50BF-1/BU-D220/2B)			296	1	RTXP18	ABB	RK 926 115-AH
E											
	5	U26.101	74BF-1/D220	DUAL TARGET RELAY REVERSE FLAG			235	1	RXSF 1	ABB	RK 271 019-AN
				" BF1 DC SUPPLY FAIL" FOR D220/2A & 2B							
				CONTACT DATA : 1NO + 2NC PER COIL							
F											
G	AS-BUILT BY _____ DATE _____		CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		LIST OF APPARATUS		الشركة الوطنية لنقل الكهرباء National Grid sa		
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	00	13 14	FOR APPROVAL		S/S 8709 S-13656		INDEX		PLANT NO.	DRAWING NUMBER	SHEET NO. REV. NO.
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		-		C421	CD-323013	SHT L01 CONT. L02 00



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B	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N		SHT.	QTY.	TYPE	MAKE	ORDERING INFORMATION
	6			MCB 2 POLE 6A, FOR DC SUPPLY WITH 2NC AUXILIARY CONTACT		216	1	S282 UC K6 S2-H02	ABB	GH S282 0164 R0317 GH S270 1916 R0003
		U37.5001	Q1	D220 - ±BF1						
C	7	U37.5002	C01 C02	CONVENIENCE OUTLET 10A, 127V AC CONVENIENCE OUTLET 10A, 220V AC		211	2	USM45 & USM\$45E	GRAND	74140 & 74180
	8		C1,C2	MINIATURE CIRCUIT BREAKER, 2 POLE, 10A FOR CONVENIENCE OUTLET WITH AUXILIARY SWITCH, 1NO + 1NC CONTACTS		211	2	S202P-K10 S2C-H11L	ABB	2CDS 252 001 R0427 GH S270 1917 R0001
	9		C3	THERMOSTAT FOR SPACE HEATER, 5-60 C		211	1	SK 3110	RITTAL	SK3110
	10	U37.5003	TJ	TELEPHONE JACK 1GANG 4WIRE		211	1	EDF410	EDISON	EDF410
D	11		C7	ON/OFF SWITCH FOR SPACE HEATER		211	1	M2SS1-10B MCBH-10	ABB	1SFA 611 200 R1006 1SFA 611 605 R1101
	12		DS	DOOR SWITCH FOR CONTROL OF CUBICLE INTERNAL ILLUMINATION LAMP		211	1	LS30P	ABB	1SBV 010213R 1202
	13		IL	INTERNAL ILLUMINATION CUBICLE LAMP SUITABLE FOR 127V AC, 60Hz SUPPLY		211	1	T4	SUNON	SP-20W
	14		SH	SPACE HEATER, 150W, 120V, 60Hz		211	1	MICAA	GRUPPO	1FZEK006C001
E										
F										
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	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. CTPD ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA			



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B	SR. NO.	GA REF.	SCH. REF.	D E S C R I P T I O N		SHT.	QTY.	TYPE	MAKE	ORDERING INFORMATION
	15		X1	BLOT CONNECTING TERMINAL BLOCKS DISCONNECTIBLE FOR CT CIRCUITS		301	20	OTTA 6T P/P	PHOENIX	0790462
			X3	SPRING LOADED TERMINAL BLOCKS DISCONNECTIBLE FOR AC CIRCUITS		301	10	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400
			X4	SPRING LOADED TERMINAL BLOCK FOR DC EXT. CIRCUITS		301	10	D6/8.ST1.RS	ENTRELEC	1SNA 115 831 R0400
			X51	SPRING LOADED TERMINAL BLOCK FOR DC PROTN. CIRCUITS		301	60	M6/8.RS	ENTRELEC	1SNA 115 685 R1200
			X6	SPRING LOADED TERMINAL BLOCK FOR ALM CIRCUITS		301	5	M6/8.RS	ENTRELEC	1SNA 115 685 R1200
			X61	KNIFE TYPE TERMINAL BLOCKS DISCONNECTIBLE FOR STN.-COM ALARM CIRCUITS		301	15	M6/8.SNB	ENTRELEC	1SNA 115 688 R2500
			XTJ	SPRING LOADED TERMINAL BLOCK FOR TELEPHONE JACK		301	5	M6/8.RS	ENTRELEC	1SNA 115 685 R1200
			XSH	SPRING LOADED TERMINAL BLOCKS FOR SPACE HEATER		301	3	M6/8.RS	ENTRELEC	1SNA 115 685 R1200
C										
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			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6			
	00	13 14	FOR APPROVAL		DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____		S/S 8709 S-13656		INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.	
	REV. NO.	DATE	DESCRIPTION		OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA		- C421 CD-323014 000 001 00	

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CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02
COVER SHEET	000	X		
CONTENTS SHEET	001	X		
GRAPHICAL SYMBOLS FOR DIAGRAMS	011	X		
GRAPHICAL SYMBOLS FOR DIAGRAMS	012	X		
COMMON LEGEND	013	X		
FERRULE AND WIRING DETAILS	014	X		
DRAWING REFERENCES	015	X		
DRAWING REFERENCES	016	X		
PRIMARY SYSTEM – D220	051	X		
AC SUPPLY FOR ILLUMINATION & POWER SOCKET	211	X		
CUB. LIGHTING, HEATER & SOCKET ALARM CKT.	212	X		
DC SUPPLY DISTRIBUTION	216	X		
CURRENT TRANSFORMER INPUTS –87B+50BF–1/BU–D220/2A	221	X		
CURRENT TRANSFORMER INPUTS –87B+50BF–1/BU–D220/2B	222	X		
87B+50BF–1/BU–D220/2A PROTN.RELAY–BINARY INPUTS	231	X		
87B+50BF–1/BU–D220/2A PROTN.RELAY–BINARY INPUTS	232	X		
87B+50BF–1/BU–D220/2B PROTN.RELAY–BINARY INPUTS	234	X		
87B+50BF–1/BU–D220/2B PROTN.RELAY–BINARY INPUTS	235	X		

CONTENTS	ABB SHT.NO.	REV.00	REV.01	REV.02
COMMON ALARM CIRCUITS	292	X		
BLOCK REFERENCE 87B+50BF–1/BU–D220/2A	293	X		
BLOCK REFERENCE 87B+50BF–1/BU–D220/2A	294	X		
BLOCK REFERENCE 87B+50BF–1/BU–D220/2B	295	X		
BLOCK REFERENCE 87B+50BF–1/BU–D220/2B	296	X		
TERMINAL BLOCKS REFERENCE	301	X		

AS-BUILT BY \_\_\_\_\_ DATE \_\_\_\_\_ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

DRAWN BY RIZ CHECKED BY KVR

DATE STARTED10.04.2013DATE COMPLETED \_\_\_\_

OPRG.DEPT. CTPD ENG. DEPT. AUT-PSAC

CONTENTS SHEET

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709 S-13656

RIYADH SAUDI ARABIA

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NG/D2-D (2012/01)  

DMS VECTOR NGD200

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G	<div><div><div>LEGENDS</div><div><div><div>±R1</div><div>DC SUPPLY – MAIN PROTECTION</div></div><div><div>±R2</div><div>DC SUPPLY – SECONDARY PROTECTION</div></div><div><div>±R3</div><div>DC SUPPLY – BACK UP PROTECTION</div></div><div><div>±IT</div><div>DC SUPPLY – INTER TRIP</div></div><div><div>FL</div><div>DC SUPPLY – FLASHING CIRCUIT</div></div><div><div>BB RS±</div><div>DC SUPPLY – BUS BAR – PROTECTION RESET</div></div><div><div>BB CBF±/CBF±</div><div>DC SUPPLY – CBF PROTECTION</div></div><div><div>R</div><div>RESET BUS – ALARM SYSTEM</div></div><div><div>CR</div><div>CONTROL ROOM</div></div><div><div>ECC</div><div>ENERGY CONTROL CENTRE</div></div><div><div>LOCAL</div><div>THE LOCATION OF CONTROLLED DEVICE</div></div><div><div>REMOTE</div><div>ANY OTHER LOCATION NOT LOCAL</div></div><div><div>ON</div><div>CB NORMALLY OPEN AUXILIARY CONTACT</div></div><div><div>OFF</div><div>CB NORMALLY CLOSED AUXILIARY CONTACT</div></div><div><div>A</div><div>COMMON</div></div><div><div>T</div><div>TEST POSITION</div></div><div><div>S</div><div>SERVICE POSITION</div></div><div><div>CS</div><div>CLOSE IN SERVICE POSITION</div></div><div><div>CT</div><div>CLOSE IN TEST POSITION</div></div><div><div>LS</div><div>LOCAL SERVICE</div></div><div><div>LT</div><div>LOCAL TEST</div></div><div><div>LC</div><div>LOCAL CLOSE</div></div><div><div>LO</div><div>LOCAL OPEN</div></div><div><div>RO</div><div>REMOTE OPEN</div></div><div><div>OP</div><div>OPERATE</div></div><div><div>RE</div><div>RESET</div></div></div><div><div>NOTES</div><div><div>LABELS</div><div>WHITE LABEL WITH BLACK LETTERING WILL BE PROVIDED FOR ALL MOUNTED APPARATUS EQUIPMENT IDENTIFICATION AND FUNCTION REFERENCE LABEL WILL BE PROVIDED FOR FRONT MOUNTED EQUIPMENTS OF THE PANEL AND EQUIPMENT IDENTIFICATION LABEL WILL BE PROVIDED FOR INTERNALLY MOUNTED EQUIPMENTS</div></div><div><div>WIRING</div><div>PVC INSULATED 600V GRADE 2.5 SQ.mm. YELLOW COLOURED FOR CT CIRCUITS 2.5 SQ.mm. RE COLOURED FOR VT CIRCUITS 1.5 SQ.mm. GREY COLOURED FOR DC SUPPLY, SCADA AND CONTROL CIRCUITS 2.5 SQ.mm. BLACK COLOURED FOR AVC AND AC CIRCUITS 2.5 SQ.mm. YELLOW/GREEN COLOURED FOR EARTHING CONNECTIONS FOLLOWING MARKERS SHALL BE PROVIDED ON FOLLOWING WIRES: + SIGN FOR DC + WIRE – SIGN FOR DC – WIRE</div></div><div><div>LUGS</div><div>A. CT CIRCUITS– RING TYPE B. OTHER CIRCUITS – SPADE TYPE</div></div><div><div>FERULLING</div><div>YELLO TUBE 3.2 mm FOR 1.5SQ mm WIRES AND 4.2 FOR 2.5 SQ mm WIRES ( AS PER 31 – TMSS–1, RE.0 )</div></div></div></div></div> <table><tr><td colspan="3">AS-BUILT BY _____ DATE _____</td><td colspan="2">CONTRACT NO. 11131113/00</td><td colspan="2">JOB ORDER NO. S-13656</td><td colspan="3">COMMON LEGEND</td><td colspan="3"><div>الشركة الوطنية لنقل الكهرباء</div><div> <b>نقل الكهرباء</b> National Grid sa</div></td></tr><tr><td></td><td></td><td></td><td colspan="2">DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u></td><td colspan="3">132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6</td><td>INDEX</td><td>PLANT NO.</td><td>DRAWING NUMBER</td><td colspan="2">SHEET NO.</td></tr><tr><td></td><td></td><td></td><td colspan="2">DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____</td><td colspan="3">S/S 8709 S-13656</td><td></td><td></td><td></td><td>SHT</td><td>CONT.</td></tr><tr><td>00</td><td>13 14</td><td>FOR APPROVAL</td><td colspan="2">OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u></td><td colspan="3">RIYADH SAUDI ARABIA</td><td>-</td><td>C421</td><td>CD-323014</td><td>013</td><td>014</td></tr><tr><td>REV. NO.</td><td>DATE</td><td>DESCRIPTION</td><td colspan="2"></td><td colspan="3"></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>										AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		COMMON LEGEND			<div>الشركة الوطنية لنقل الكهرباء</div> <div> <b>نقل الكهرباء</b> National Grid sa</div>						DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6			INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.					DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____		S/S 8709 S-13656						SHT	CONT.	00	13 14	FOR APPROVAL	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH SAUDI ARABIA			-	C421	CD-323014	013	014	REV. NO.	DATE	DESCRIPTION											
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FOR 132kV RELAY & CONTROL, PROTN. PANELS

AS PER IEC-391 FIG 14a (W/O SUPPLEMENTARY/IDENTIFICATION MARK)

FOR 132kV PANELS INTERPANEL WIRING

AS PER IEC-391 FIG 14d (W/O SUPPLEMENTARY/IDENTIFICATION MARK)

WIRES –  
PVC insulated,stranded,  
coaled annealed copper  
conductor graded for 1000V

LUGS –  
Pre-Insulated

a. CT Circuits – 2.5 Sqmm PVC Yellow colour

b. VT Circuits – 1.5 Sqmm PVC Red colour

c. DC, & CONTROL Circuits – 1.5 Sqmm PVC Grey colour

d. Alarm Circuits – 1.0 Sqmm PVC Blue colour

e. AVC & AC Circuits – 2.5 Sqmm PVC Black colour

f. Earth Circuits – 2.5 Sqmm PVC Yellow/Green colour

a( CT Circuits – Ring type

b( Other Circuits – Spade type

NOTE:1 ADDITIONAL MARKING AS APPLICABLE

NOTE:2 FERRULE NUMBERING WILL BE BLACK LETTERS ON YELLOW TUBE

3.2 mm for 1.5 sq mm wires and

4.2 mm for 2.5 sq mm wires

( As per 31-TMSS-1, REV 0 )

NOTE:3 STARTING POINT OF THE FERRULE LEFT TO RIGHT

AS-BUILT BY \_\_\_\_\_ DATE \_\_\_\_\_ CONTRACT NO. 11131113/00 JOB ORDER NO. S-13656

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FERRULE AND WIRING DETAILS

132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6

S/S 8709 S-13656


RIYADH SAUDI ARABIA

الشركة الوطنية لنقل الكهرباء

National Grid sa

INDEX PLANT NO. DRAWING NUMBER SHEET NO. REV. NO.

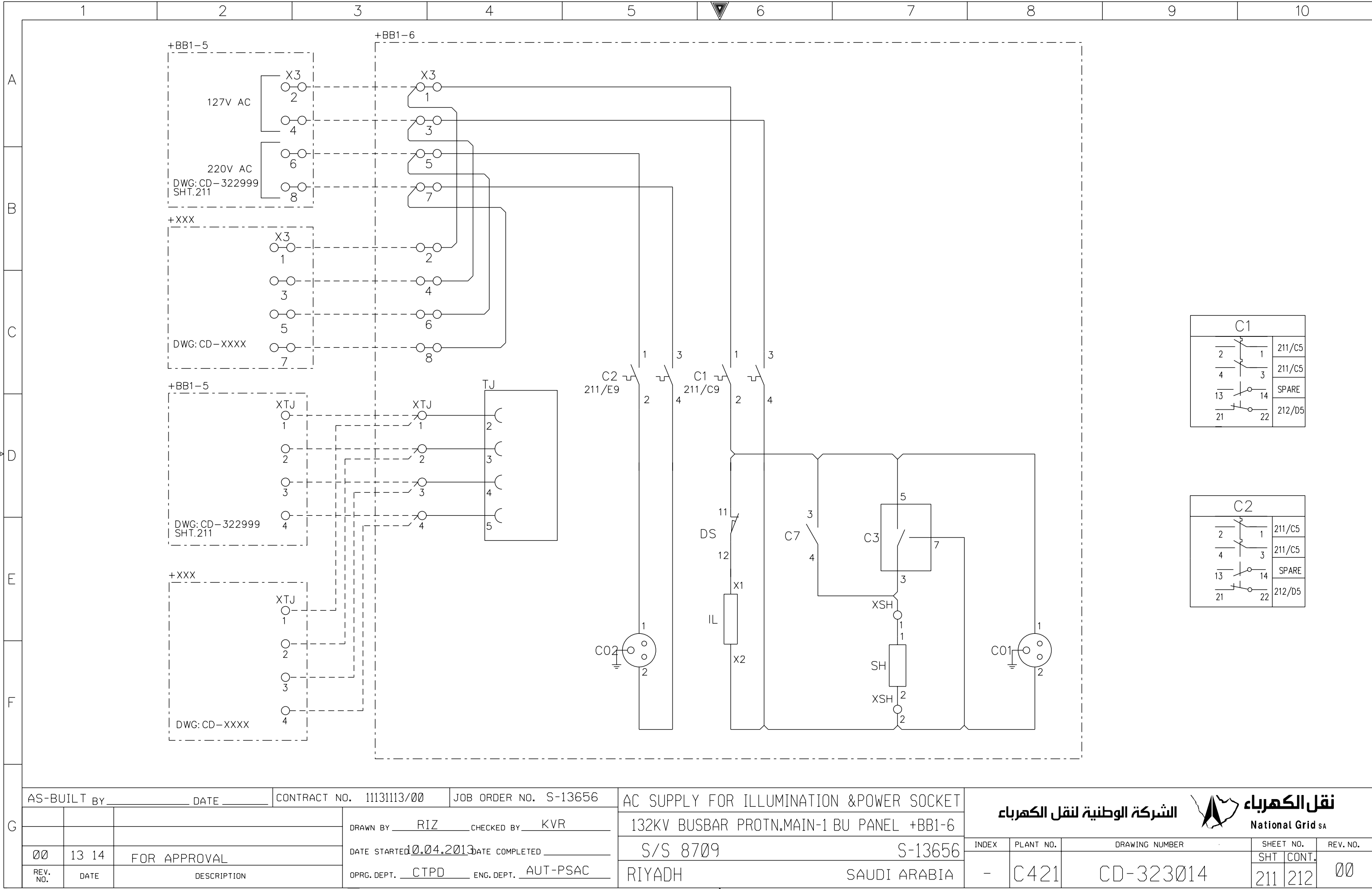
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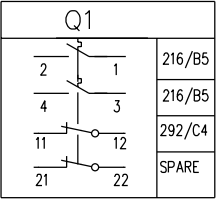
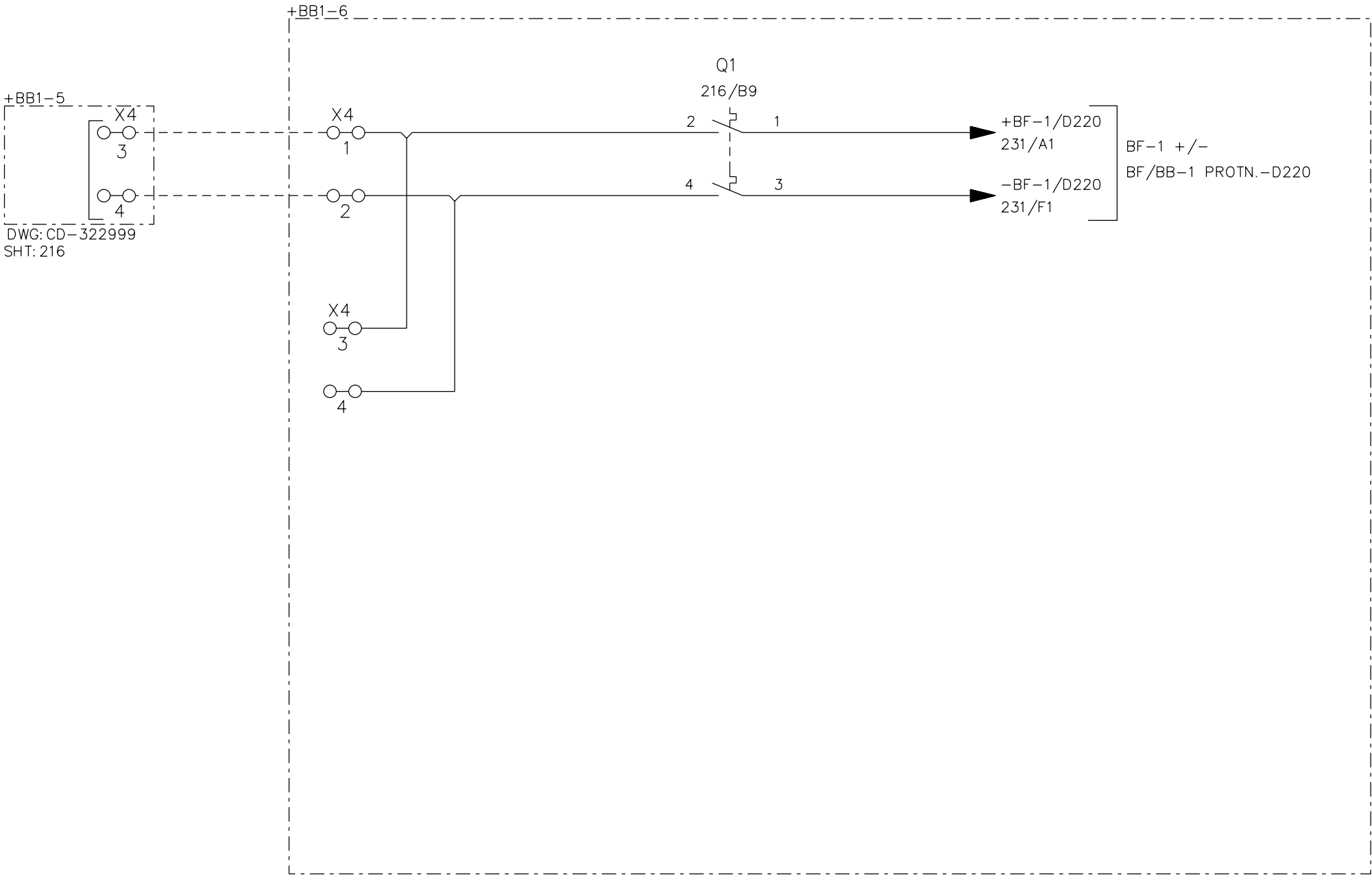
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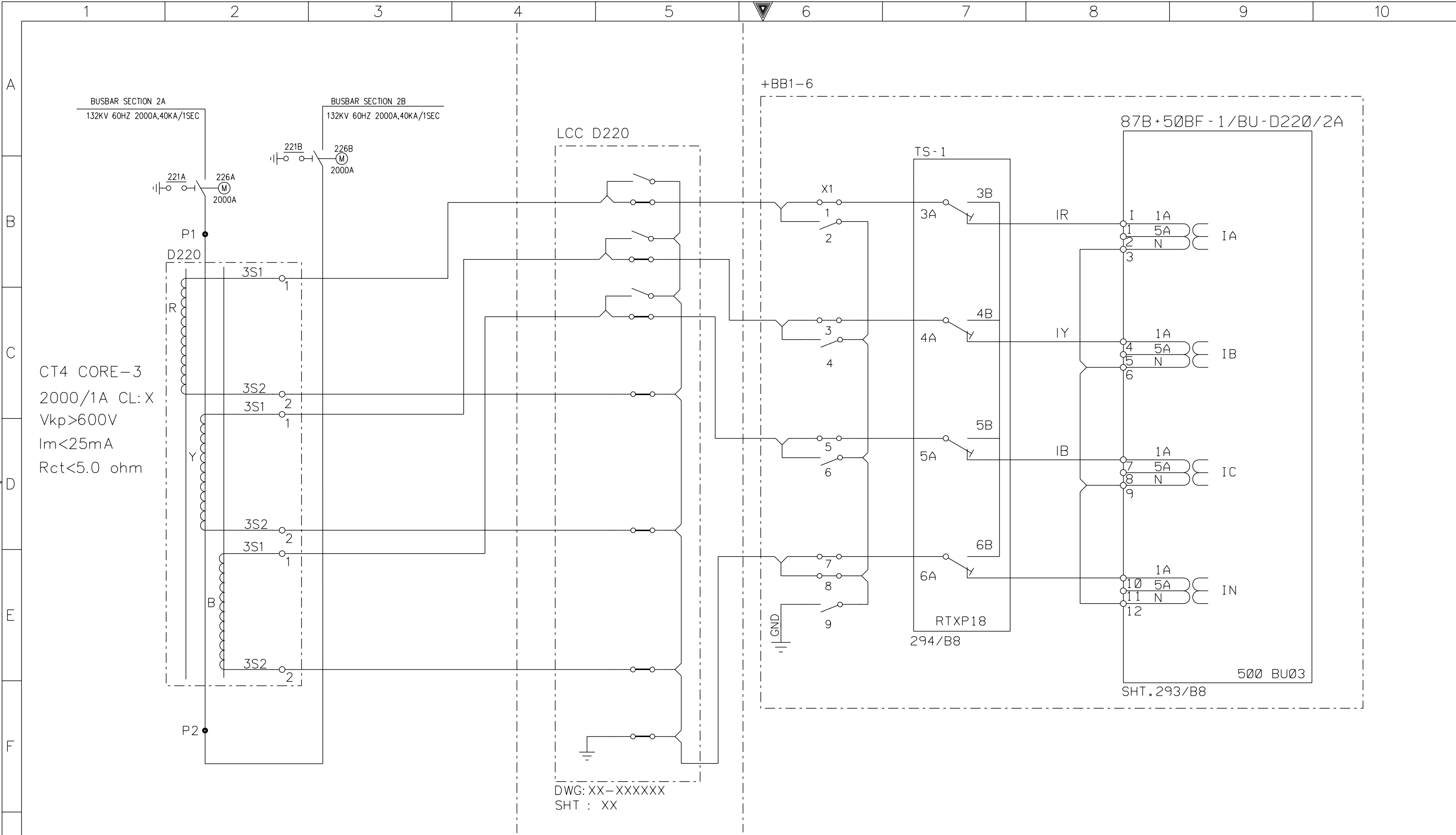
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DC SUPPLY DISTRIBUTION
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6
S/S 8709 S-13656
RIYADH SAUDI ARABIA

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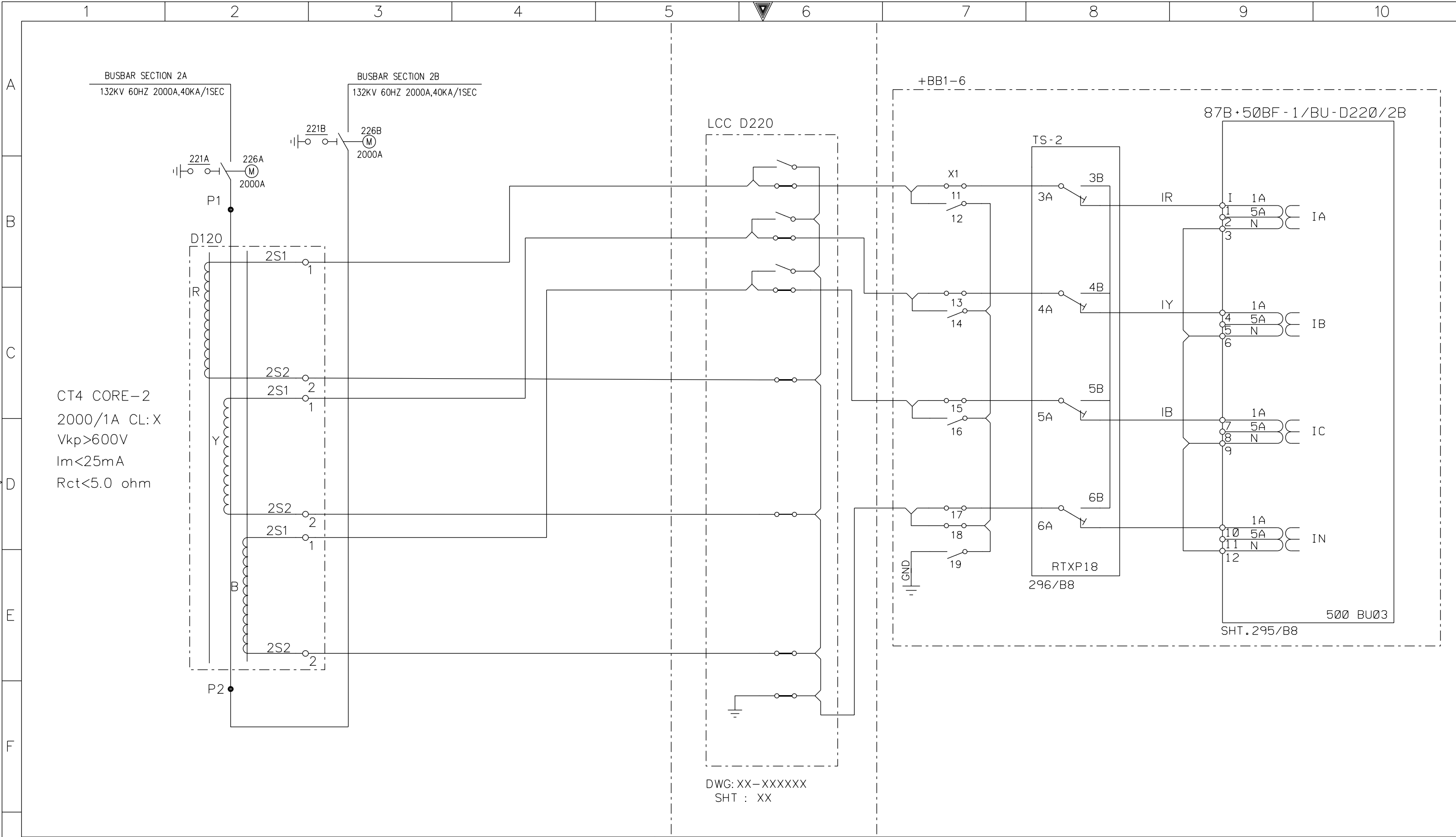


AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		CURRENT TRANSFORMER INPUTS -87B+50BF-1/BU-D220/2A		
			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>				132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
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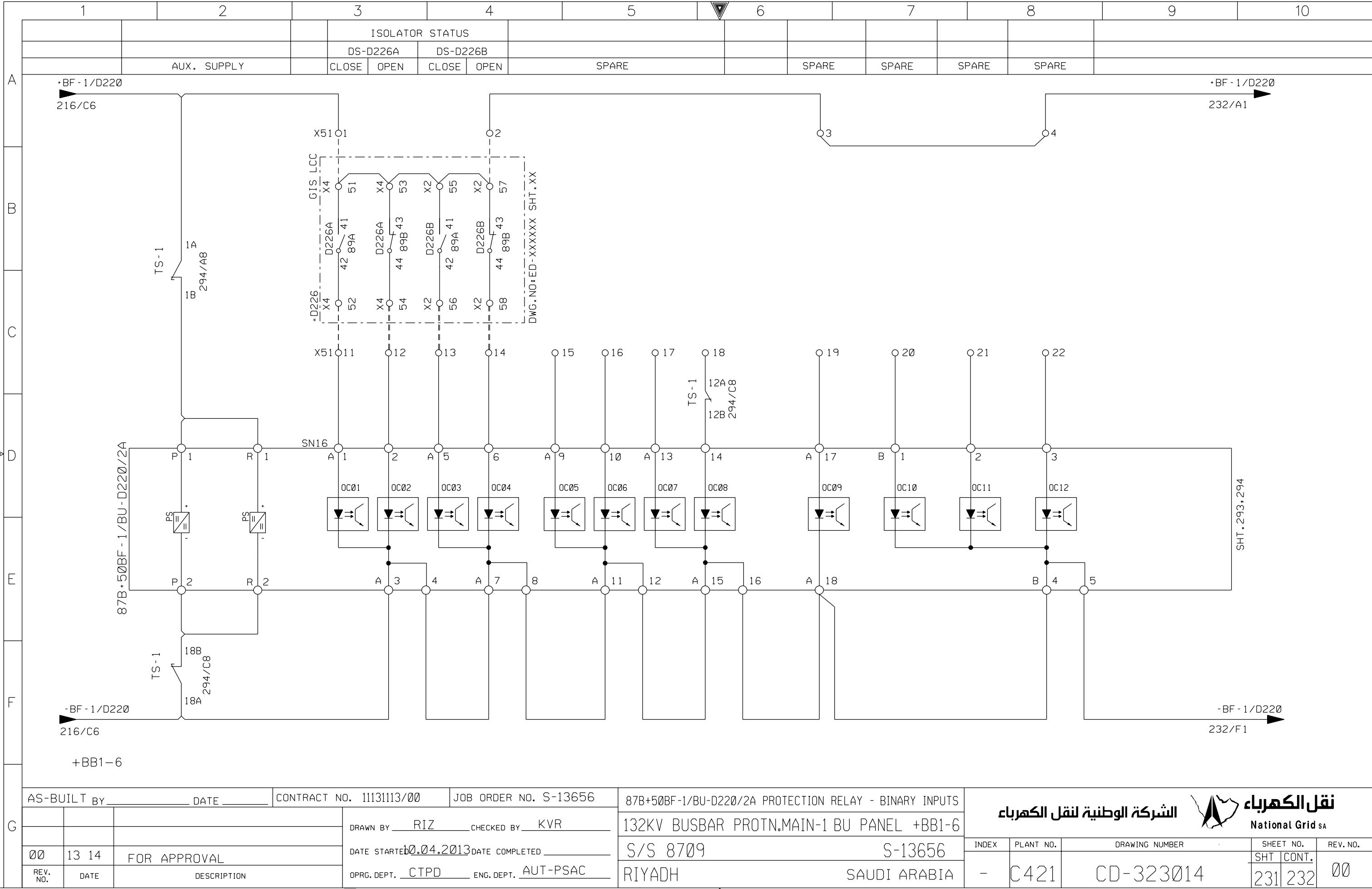
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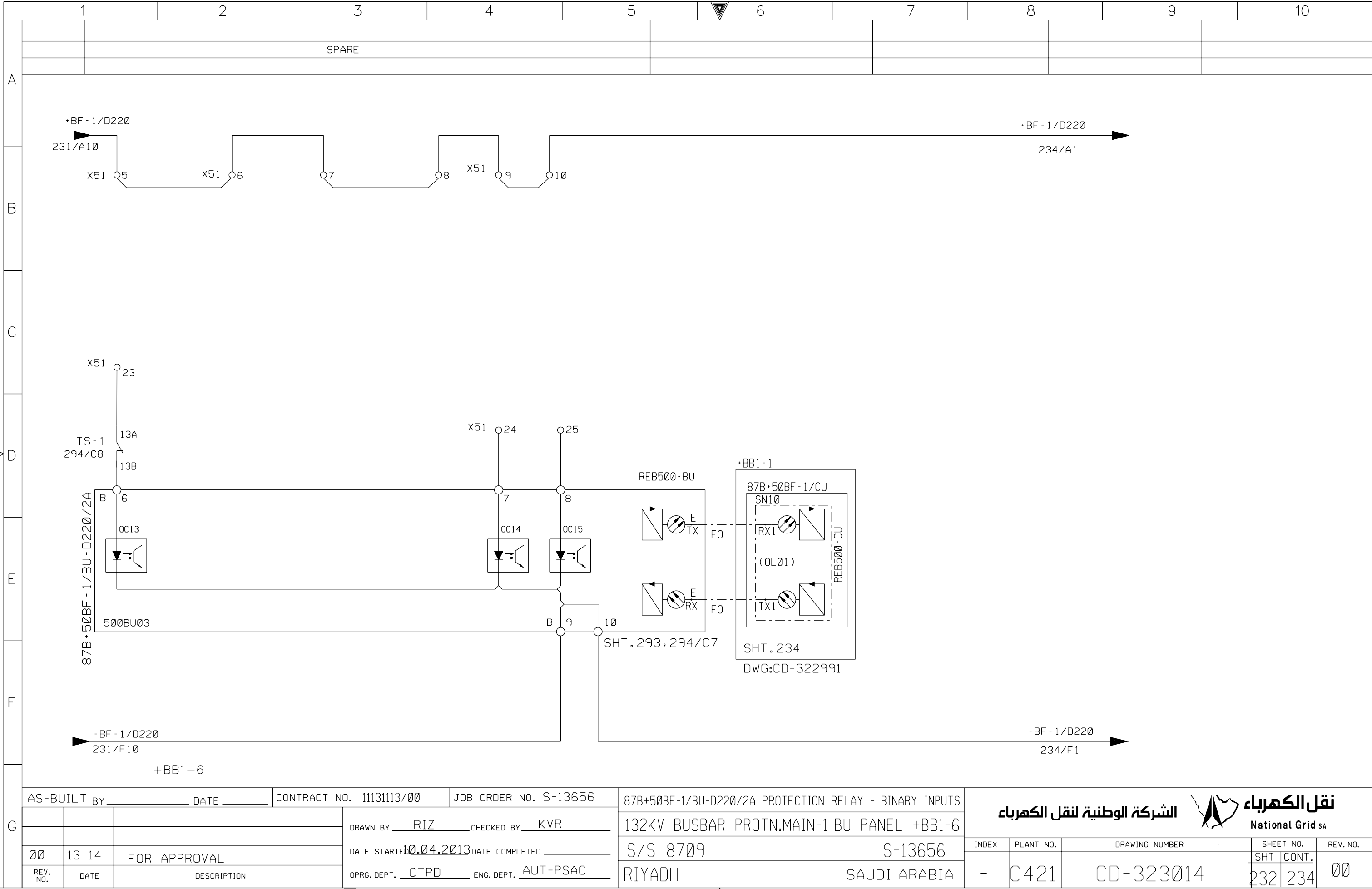
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CURRENT TRANSFORMER INPUTS -87B+50BF-1/BU-D220/2B  
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6  
S/S 8709 S-13656  
RIYADH SAUDI ARABIA

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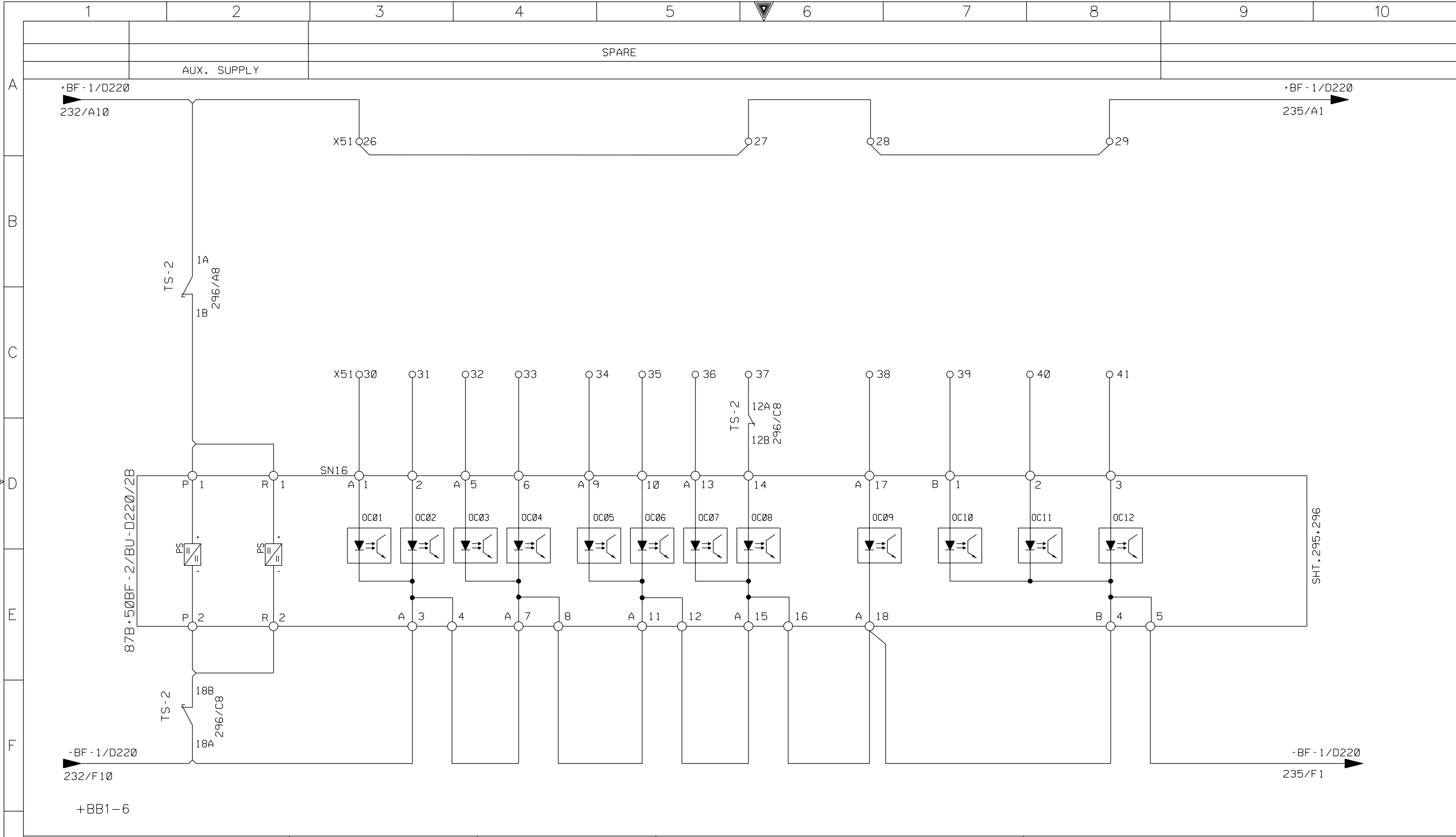


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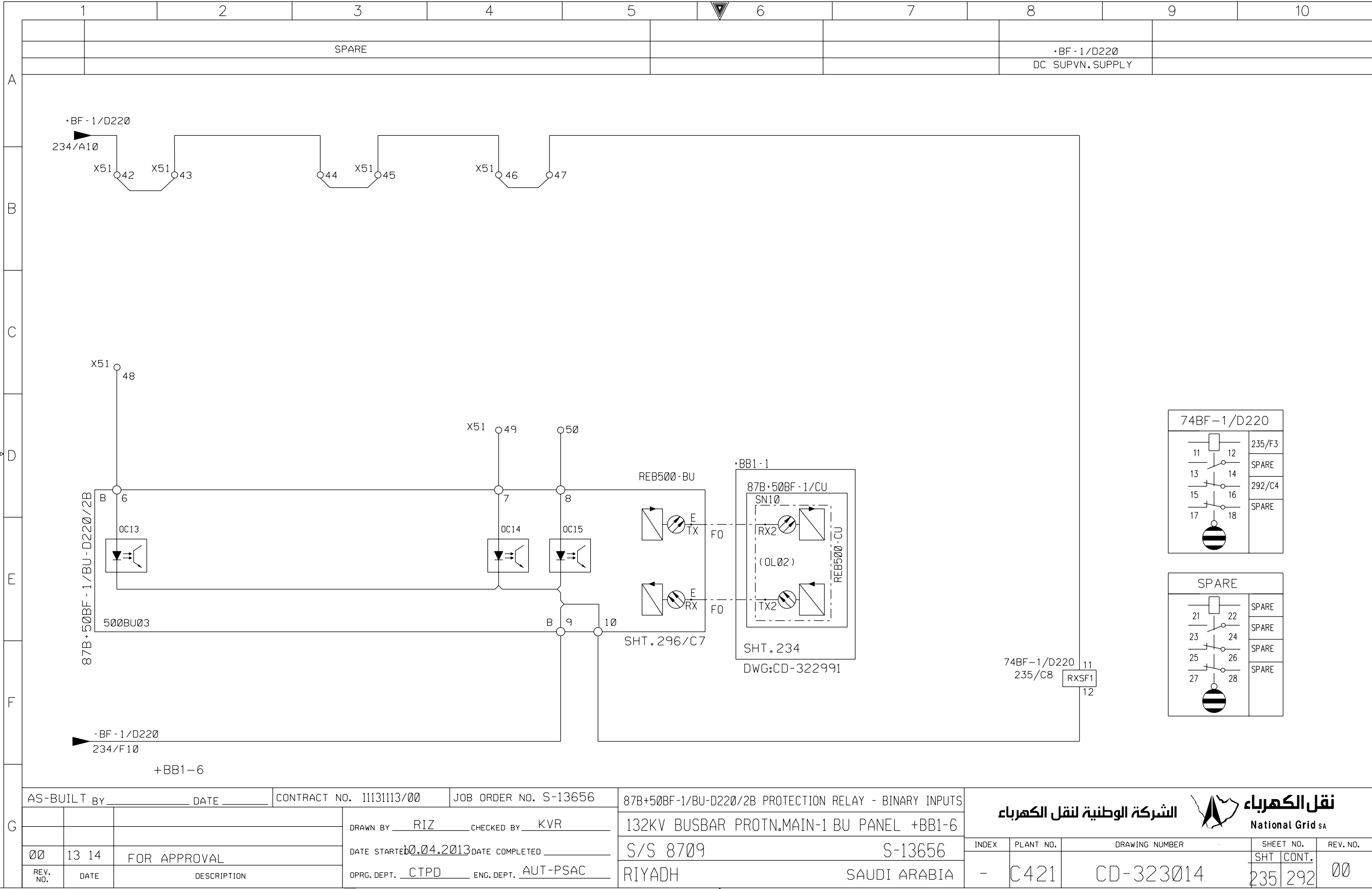
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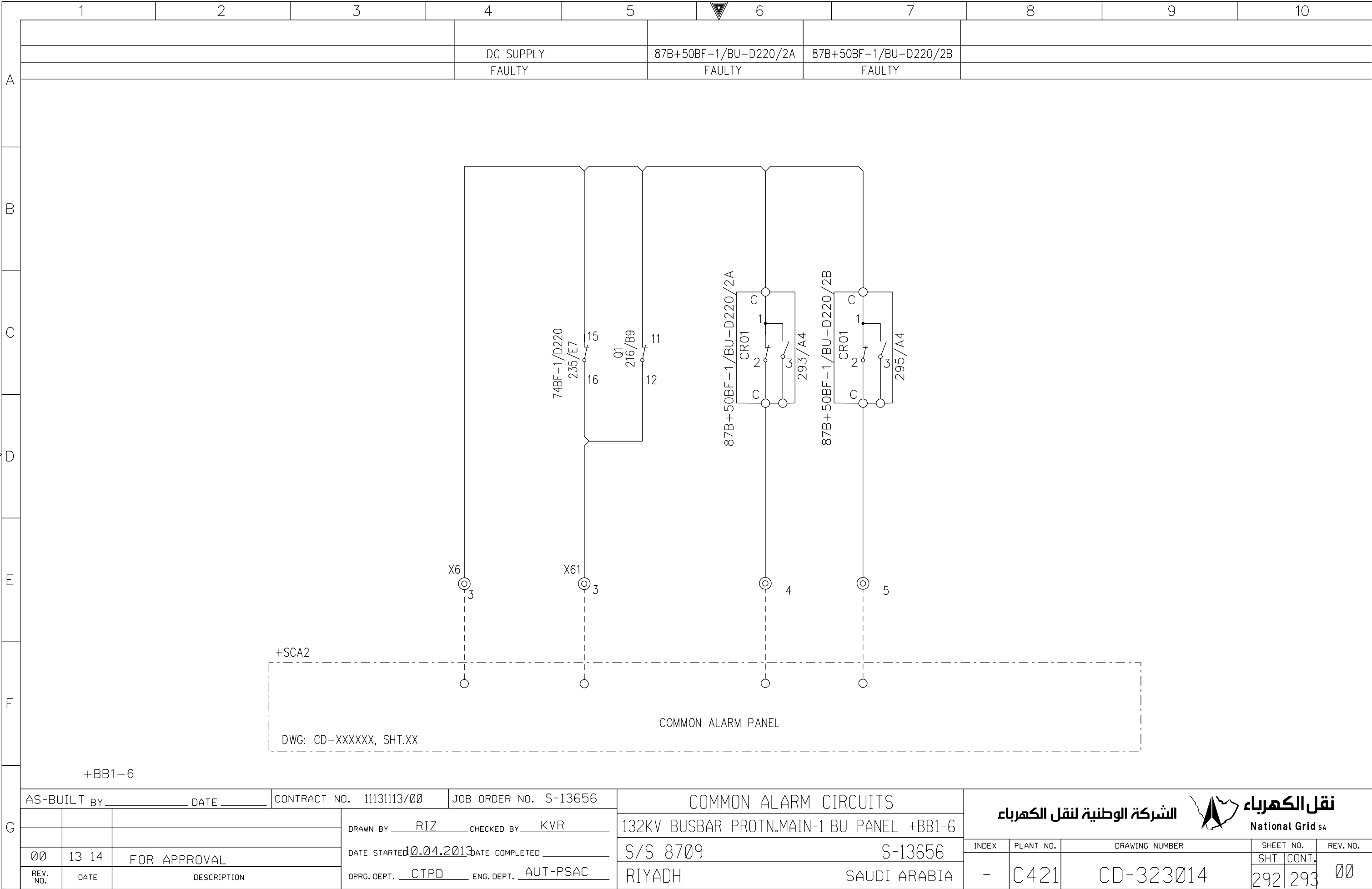


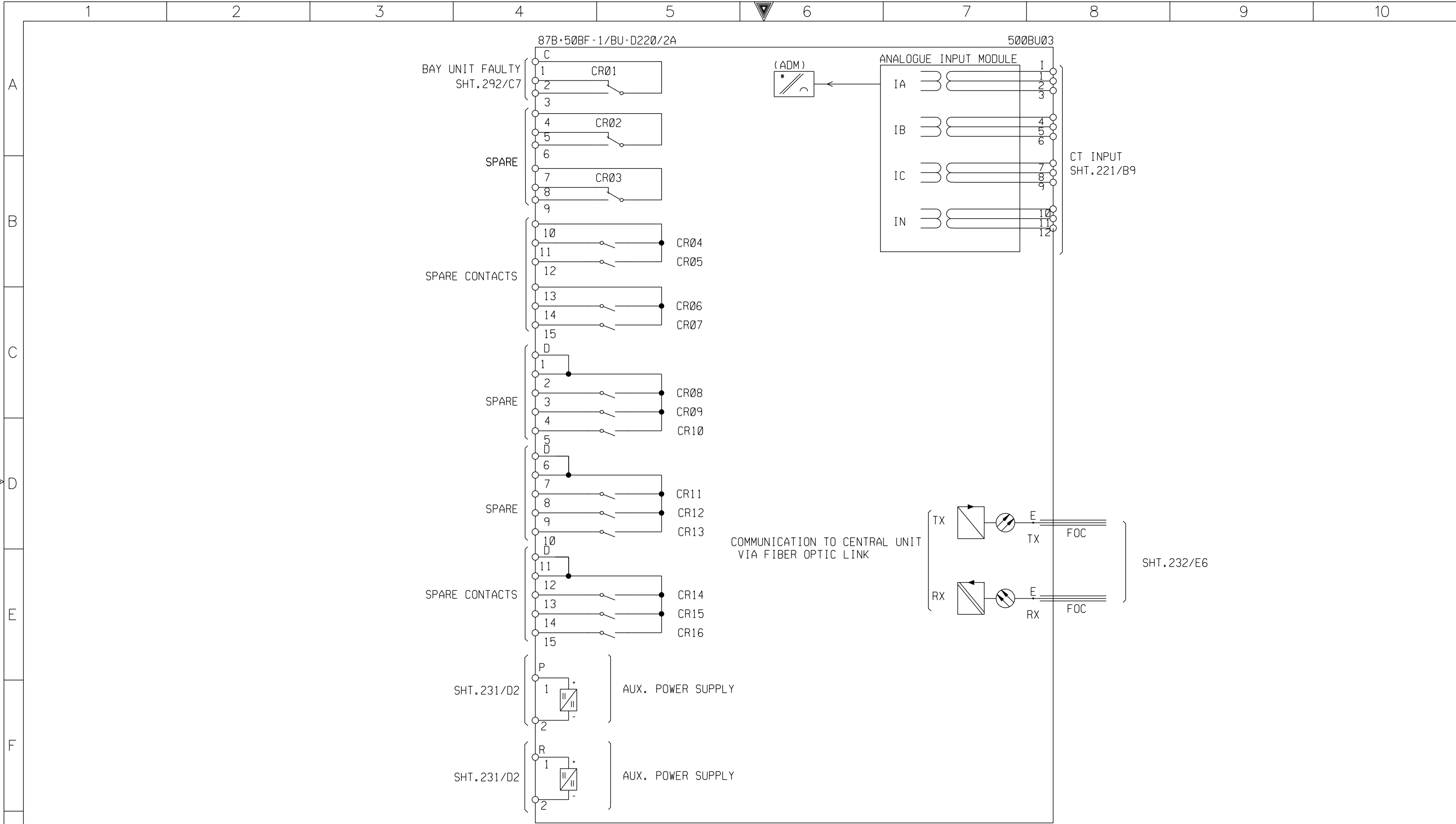
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			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
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REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>		RIYADH		SAUDI ARABIA		

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AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656	
			DRAWN BY <u>RIZ</u> CHECKED BY <u>KVR</u>			
00	13 14	FOR APPROVAL	DATE STARTED <u>10.04.2013</u> DATE COMPLETED _____			
REV. NO.	DATE	DESCRIPTION	OPRG. DEPT. <u>CTPD</u> ENG. DEPT. <u>AUT-PSAC</u>			

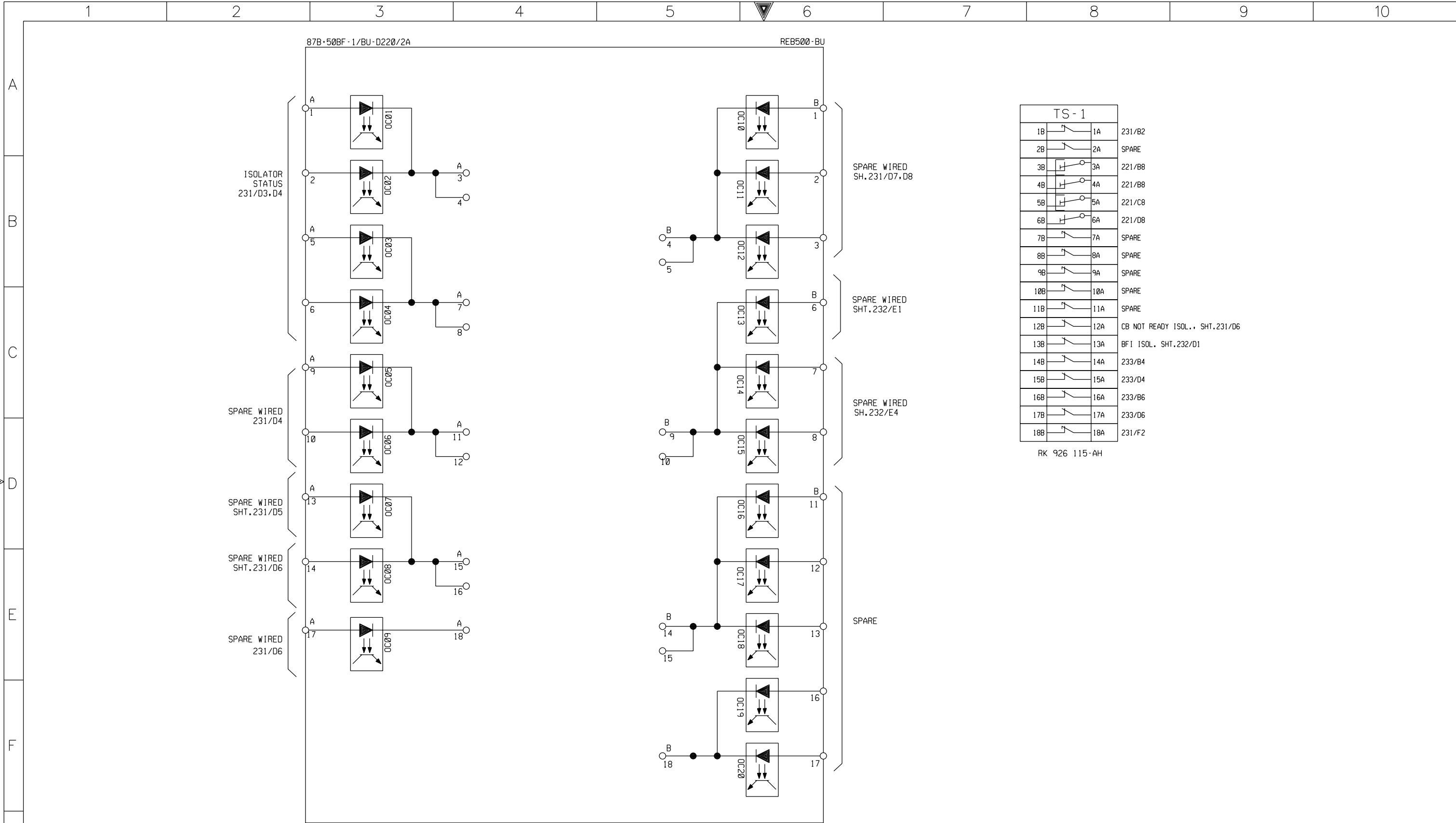
BLOCK REFERENCE-87B+50BF-1/BU-D220/2A					
132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6					
S/S 8709			S-13656		
RIYADH			SAUDI ARABIA		

الشركة الوطنية لنقل الكهرباء

نقل الكهرباء

National Grid sa

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
-	C421	CD-323014	SHT	CONT.	00
			293	294	



TS - 1		
1B	1A	231/B2
2B	2A	SPARE
3B	3A	221/B8
4B	4A	221/B8
5B	5A	221/C8
6B	6A	221/D8
7B	7A	SPARE
8B	8A	SPARE
9B	9A	SPARE
10B	10A	SPARE
11B	11A	SPARE
12B	12A	CB NOT READY ISOL., SHT.231/D6
13B	13A	BF I ISOL. SHT.232/D1
14B	14A	233/B4
15B	15A	233/D4
16B	16A	233/B6
17B	17A	233/D6
18B	18A	231/F2

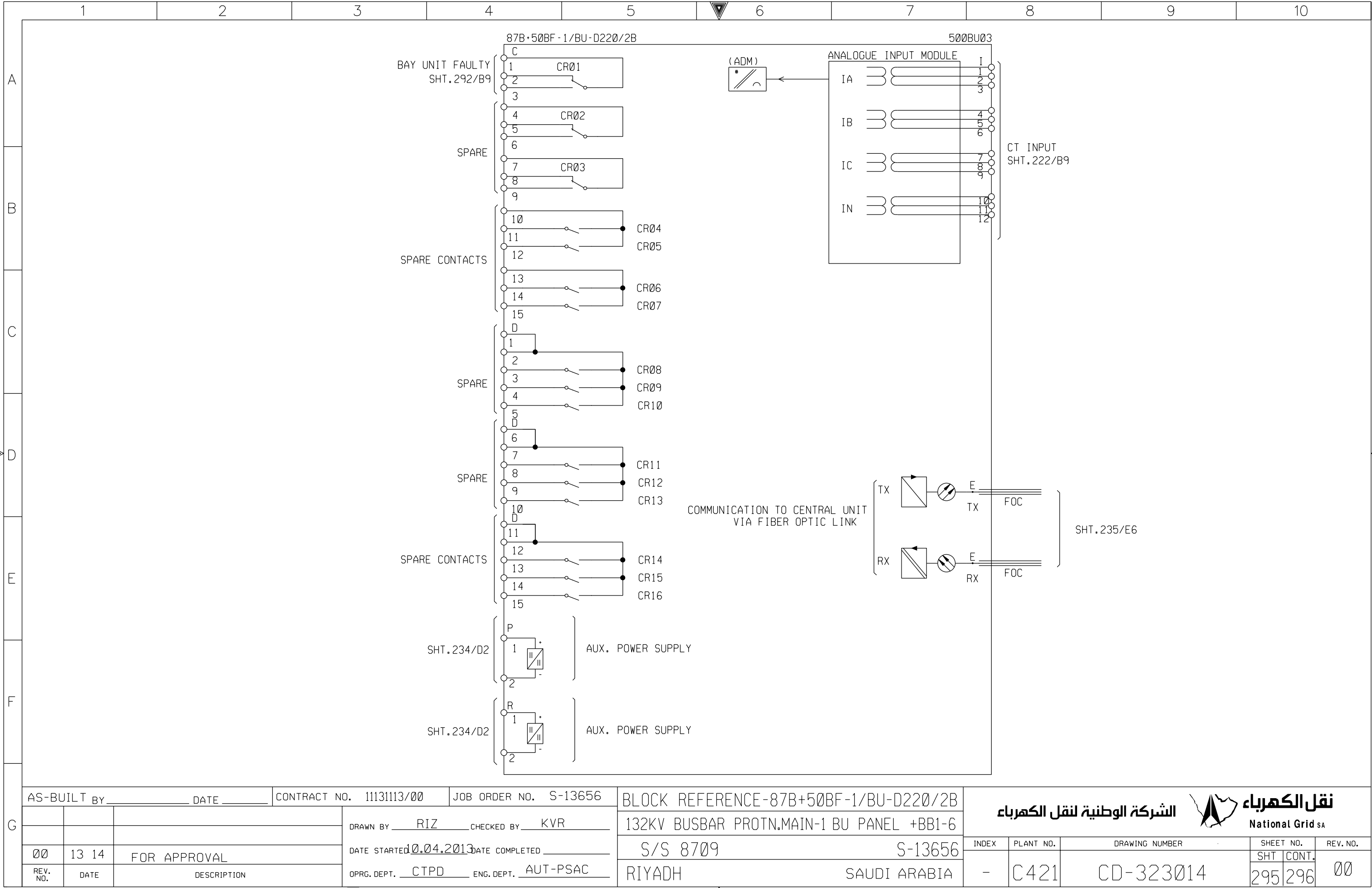
RK 926 115-AH

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE-87B+50BF-1/BU-D220/2A		
			DRAWN BY RIZ		CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
00			DATE STARTED 10.04.2013		DATE COMPLETED _____		S/S 8709 S-13656		
FOR APPROVAL			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		RIYADH SAUDI ARABIA		
REV. NO.	DATE	DESCRIPTION					INDEX	PLANT NO.	DRAWING NUMBER
	13 14						-	C421	CD-323014

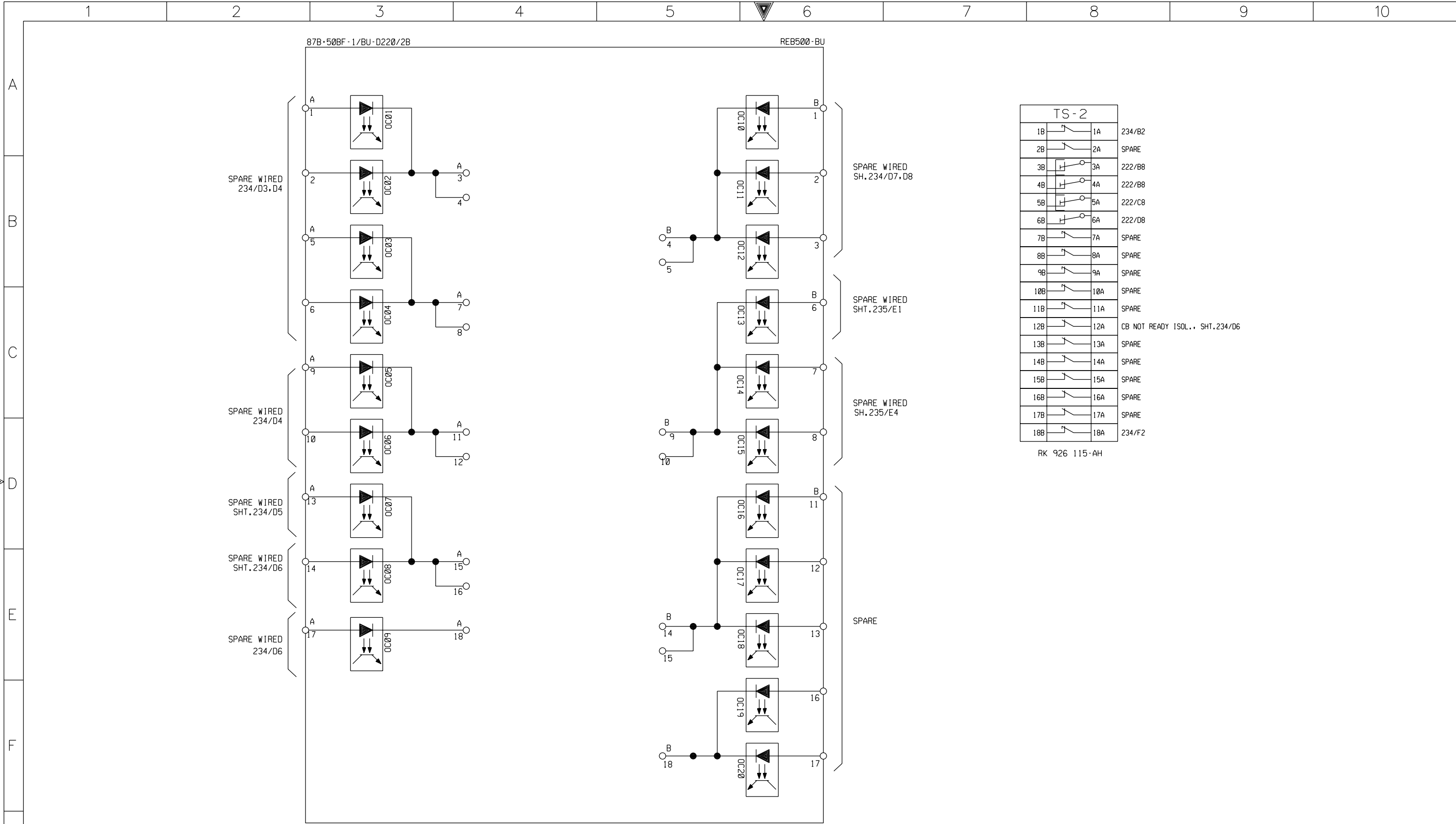


SHEET NO.		REV. NO.
SHT	CONT.	
294	295	00






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TS - 2		
1B	1A	234/B2
2B	2A	SPARE
3B	3A	222/B8
4B	4A	222/B8
5B	5A	222/C8
6B	6A	222/D8
7B	7A	SPARE
8B	8A	SPARE
9B	9A	SPARE
10B	10A	SPARE
11B	11A	SPARE
12B	12A	CB NOT READY ISOL., SHT.234/D6
13B	13A	SPARE
14B	14A	SPARE
15B	15A	SPARE
16B	16A	SPARE
17B	17A	SPARE
18B	18A	234/F2
RK 926 115-AH		

AS-BUILT BY _____ DATE _____			CONTRACT NO. 11131113/00		JOB ORDER NO. S-13656		BLOCK REFERENCE-87B+50BF-1/BU-D220/2B		
			DRAWN BY RIZ		CHECKED BY KVR		132KV BUSBAR PROTN.MAIN-1 BU PANEL +BB1-6		
00			DATE STARTED 10.04.2013		DATE COMPLETED _____		S/S 8709		
FOR APPROVAL			OPRG. DEPT. CTPD		ENG. DEPT. AUT-PSAC		S-13656		
REV. NO.	DATE	DESCRIPTION					RIYADH SAUDI ARABIA		

INDEX	PLANT NO.	DRAWING NUMBER	SHEET NO.		REV. NO.
-	C421	CD-323014	SHT	CONT.	00
			296	301	

	1	2	3	4	5	6	7	8	9	10																																																																																																																																																																																																																																																																		
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CKT.</td></tr><tr><td>212/E5</td><td>1</td></tr><tr><td>212/E5</td><td>2</td></tr><tr><td>292/E4</td><td>3</td></tr><tr><td>292/E5</td><td>4</td></tr><tr><td>292/E7</td><td>5</td></tr><tr><td>SPARE</td><td>6</td></tr><tr><td>SPARE</td><td>7</td></tr><tr><td>SPARE</td><td>8</td></tr><tr><td>SPARE</td><td>9</td></tr><tr><td>SPARE</td><td>10</td></tr><tr><td>SPARE</td><td>11</td></tr><tr><td>SPARE</td><td>12</td></tr><tr><td>SPARE</td><td>13</td></tr><tr><td>SPARE</td><td>14</td></tr><tr><td>SPARE</td><td>15</td></tr></table>		REFERENCE	X61 ALM. CKT.	212/E5	1	212/E5	2	292/E4	3	292/E5	4	292/E7	5	SPARE	6	SPARE	7	SPARE	8	SPARE	9	SPARE	10	SPARE	11	SPARE	12	SPARE	13	SPARE	14	SPARE	15	<table><tr><td>REFERENCE</td><td>X3 AC CKT.</td></tr><tr><td>211/A3</td><td>1</td></tr><tr><td>211/A7</td><td>2</td></tr><tr><td>211/A3</td><td>3</td></tr><tr><td>211/A7</td><td>4</td></tr><tr><td>211/B3</td><td>5</td></tr><tr><td>211/B7</td><td>6</td></tr><tr><td>211/B3</td><td>7</td></tr><tr><td>211/B7</td><td>8</td></tr><tr><td>SPARE</td><td>9</td></tr><tr><td>SPARE</td><td>10</td></tr></table>		REFERENCE	X3 AC CKT.	211/A3	1	211/A7	2	211/A3	3	211/A7	4	211/B3	5	211/B7	6	211/B3	7	211/B7	8	SPARE	9	SPARE	10	<table><tr><td>REFERENCE</td><td>XTJ T.JACK</td></tr><tr><td>211/C3</td><td>1</td></tr><tr><td>211/D3</td><td>2</td></tr><tr><td>211/D3</td><td>3</td></tr><tr><td>211/D3</td><td>4</td></tr><tr><td>SPARE</td><td>5</td></tr></table>		REFERENCE	XTJ T.JACK	211/C3	1	211/D3	2	211/D3	3	211/D3	4	SPARE	5	<table><tr><td>REFERENCE</td><td>XSH SPACE HEATER</td></tr><tr><td>211/E6</td><td>1</td></tr><tr><td>211/F6</td><td>2</td></tr><tr><td>SPARE</td><td>3</td></tr></table>		REFERENCE	XSH SPACE HEATER	211/E6	1	211/F6	2	SPARE	3	<table><tr><td>REFERENCE</td><td>X6 ALM. CKT.</td></tr><tr><td>212/C5</td><td>1</td></tr><tr><td>212/C5</td><td>2</td></tr><tr><td>292/E3</td><td>3</td></tr><tr><td>SPARE</td><td>4</td></tr><tr><td>SPARE</td><td>5</td></tr></table>		REFERENCE	X6 ALM. CKT.	212/C5	1	212/C5	2	292/E3	3	SPARE	4	SPARE	5
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